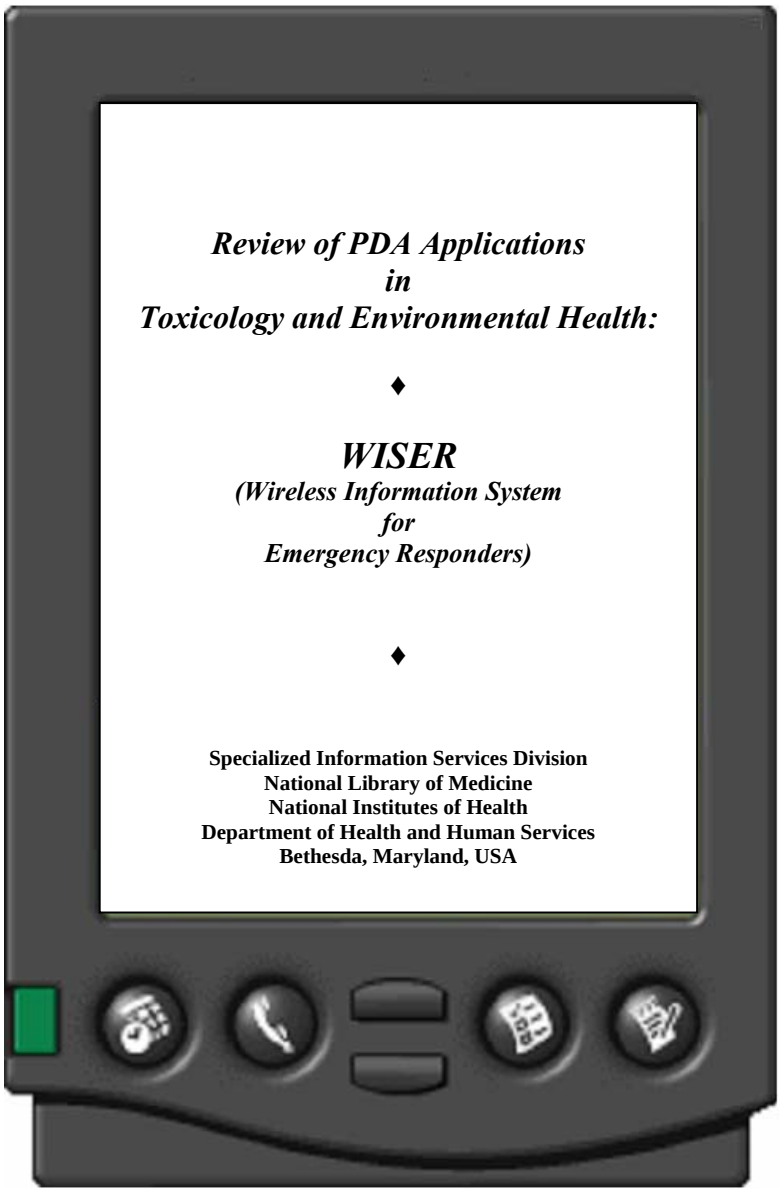
UNITED STATES
National Library of Medicine



Review of PDA Applications in Toxicology and Environmental Health:

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WISER

(Wireless Information System for Emergency Responders)

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Specialized Information Services Division
National Library of Medicine
National Institutes of Health
Department of Health and Human Services
Bethesda, Maryland, USA

WISER- Wireless Information System for Emergency Responders

(Reviewed 09/2004)

General Information

For general comments regarding the *Review of PDA Applications in Toxicology and Environmental Health*, please see the ***Overview***.

The technical and content review of this PDA application – ***WISER*** – was based on downloadable freeware. ***WISER*** is designed to assist emergency personnel in managing dangerous materials incidents. Developed by the National Library of Medicine, it provides a wide range of information on hazardous substances, including substance identification support, physical characteristics, human health information, and containment and suppression guidance.

Intended Users

- First Responders
- HAZMAT Personnel
- EMS Personnel

Authorship/Data Source

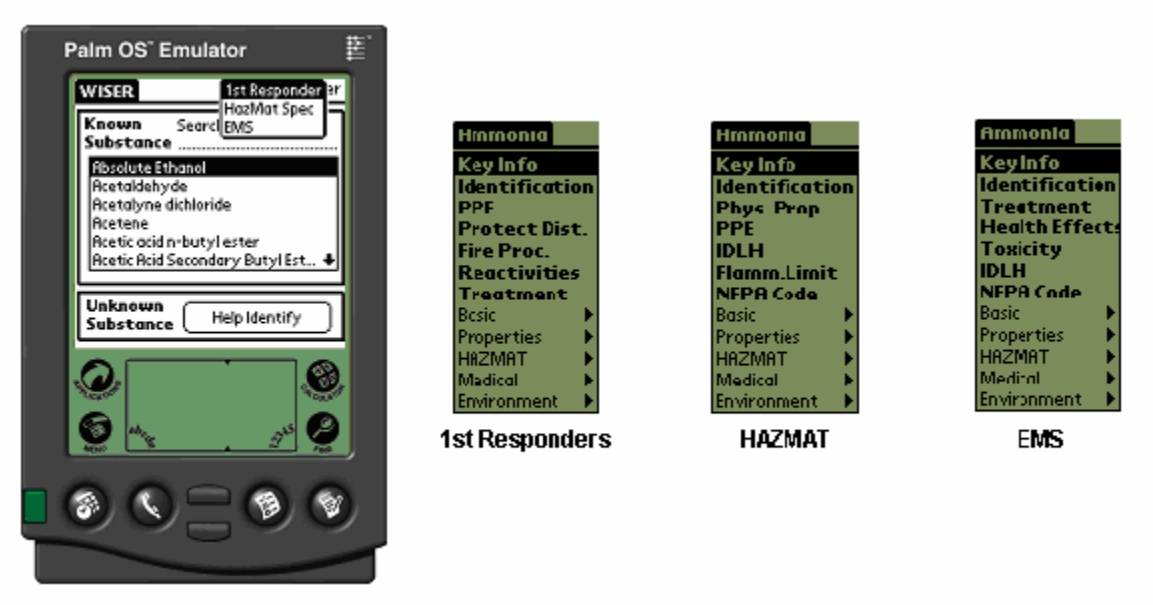
WISER was developed by the Specialized Information Services Division of the National Library of Medicine. WISER data comes from the Hazardous Substances Data Bank (HSDB), a toxicology data file on the National Library of Medicine's (NLM) Toxicology Data Network (TOXNET®). HSDB contains information on human exposure, industrial hygiene, emergency handling procedures, environmental fate, regulatory requirements, and related areas. All data are referenced and derived from a core set of books, government documents, technical reports and selected primary journal literature.

Contents

WISER subject matter is applicable to hazardous substance crises and provides immediate access to needed information during emergencies. The following topics are included in the WISER system:

- Fire Procedures
- Flammability Limits
- Health Effects
- IDLH (Immediately Dangerous to Life or Health)
- NFPA Code (National Fire Protection Association)
- Physical Properties
- PPE (Personal Protective Equipment)
- Protective Distance
- Reactivities
- Toxicity
- Treatment

WISER contains HSDB information and decision support logic for 390 substances. The substances were chosen based on input from First Responders, degree of chemical hazard, and historical frequency of incidents.

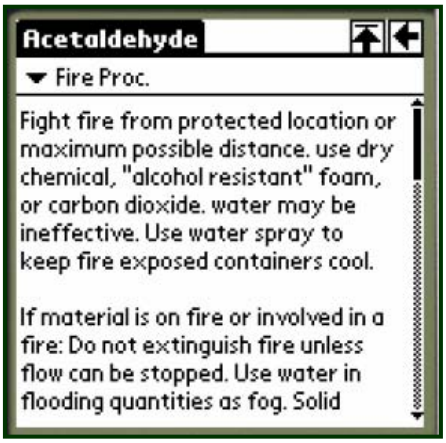


▲ ***User Profiles***
WISER can be tailored to fit the user's needs, ensuring that the most relevant information is seen first. Three profiles are available: 1st Responders, HAZMAT, and EMS. The profile is set by tapping in the upper right corner of the screen.

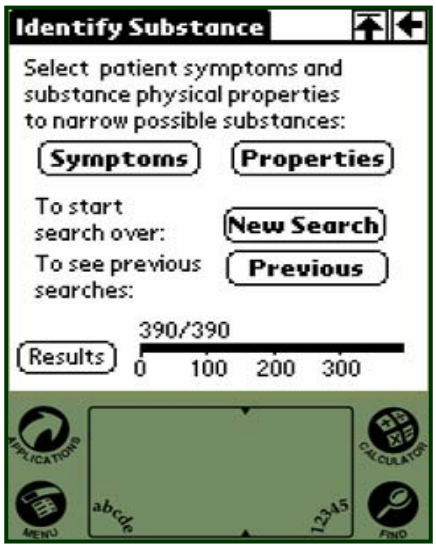
◄Known substances are retrieved by scrolling through the list of substances or by entering in the substance name. You can also locate material by entering one of the substance's identification numbers in the Known Substance field, choosing UN/NA number, CAS registry number, or STCC number.

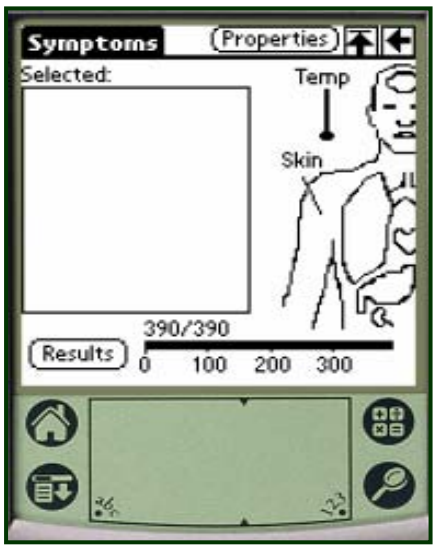
◄ A variety of information is available for each substance. The terms shown in bold are the categories of most interest for the selected user profile. The tappable, drill-down menu below Key Info directs the user to five main groups: Basic, Properties, HAZMAT, Medical, and Environment. Taping on one of these groups takes the user to more detailed information.

► *The screen shot to the right is an example of the more detailed information retrieved after choosing an item from the menu. This screen shows fire fighting procedures for the substance in question.*



► *Unknown substances can be found by searching on either physical properties or patient symptoms. New Search clears any existing retrieval. Tapping on Previous shows a list of searches done during the current WISER session. You can search by combining properties and symptoms.*





◄ *Symptoms are grouped by Skin, Temperature, Neurological, Gastro/Urinary, Cardiovascular, Respiratory, Mouth/Throat, Nose, Eyes, and Neurological categories. Tap on the words Temp or Skin or tap on the drawing of the body system.*

It is possible to select symptoms from each category or a combination of categories. This

reduces the number of chemicals found and reduces the results to more likely candidates.

► *In this screen, the user has chosen Neurological symptoms as the search criterion. The numbers following the words are the numbers of chemicals matching that neurological status. Taping on a symptom takes the user to the Results screen and from there the user can go to a specific chemical.*

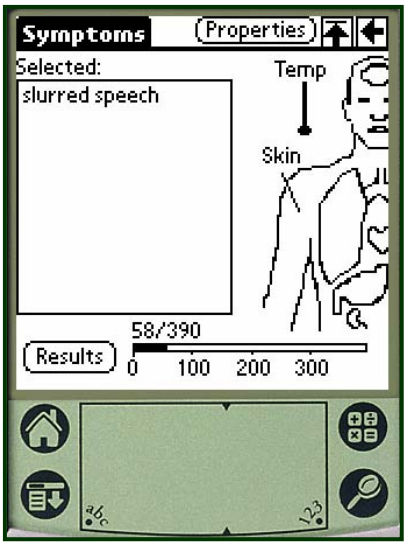
◄ *Properties are grouped by State, Color, Clarity, Odor, Taste, pH, Specific Gravity, and Vapor Density categories. Tap on any of the categories to go to a list of possible choices. Users may select from one property category or all categories or a combination of categories to match what they know about the unknown chemical.*

► *This screen shot shows the State category. The numbers following the words are the numbers of chemicals having that particular property. The total number of chemicals within WISER is 390 and you can view the entire list here.*

◄ ***Adding properties to the search refines the results and reduces the number of chemicals retrieved.***

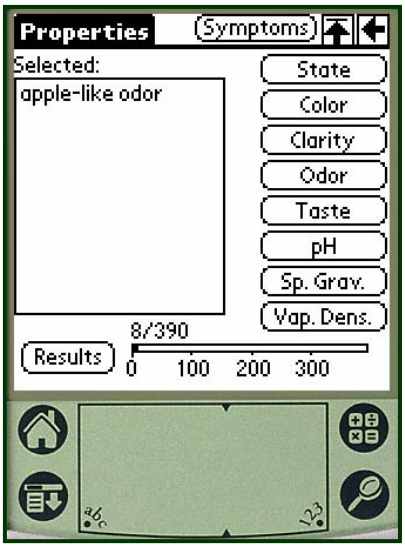
◄ ***The search results can be sorted by properties or symptoms or chemical name. You tap on a name to view the information about that chemical, starting with the key information.***

► *It is also possible to combine Symptoms and Properties in one search. The user has selected "slurred speech" from the Symptoms list. By tapping on the Properties button at the top of the screen, the user will be taken to a list of chemicals having that characteristic. From there the user can select the particular properties matching the unknown chemical.*

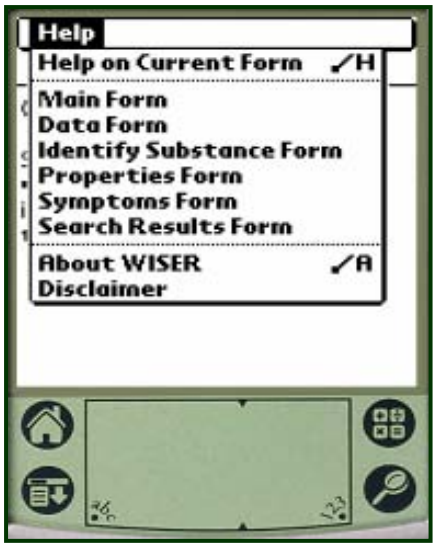


◄ *Odor properties for unknown chemical producing slurred speech. The user would tap on the specific odor*

► *By combining Symptoms and Properties the user has reduced the unknown chemicals from a pool of 390 to 8, a much easier number of chemicals to review.*



Navigation



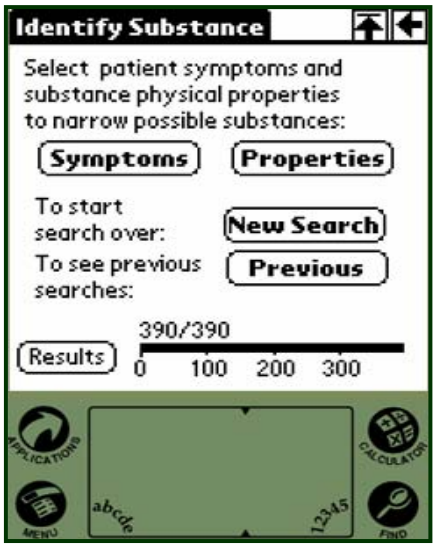
Tapping the black area at the top of any screen takes you to Help for either the current screen or any of the other areas within WISER.

There are two arrows in the top right corner of the screen.

The up arrow returns you to the main search page.

The left arrow takes you back one step

Tapping Results take you to the most recent search results.



Beam WISER

Tapping the black area at the top of the screen from the initial WISER display brings up the Beam option. This option lets the user transfer a PDA application via the Infrared (IR) port. However, since the WISER database is large, this would take a very long time.

Requirements

- Palm OS 3.5 (or higher)
- 14 MB of available space either on the handheld or on an SD expansion card.

Application Type/Price

- Freeware

Availability

WISER can be downloaded at http://wiser.nlm.nih.gov.

Useful Web Links

For information about the Specialized Information Services division, visit http://sis.nlm.nih.gov. For information about the Hazardous Substances Data Bank, go to http://www.nlm.nih.gov/pubs/factsheets/hsdbfs.html.

Review of PDA Applications in Toxicology and Environmental Health

Overview

Handheld computer devices known as Personal Digital Assistants (PDAs) are increasingly being used in the fields of toxicology and environmental health. Moreover, software applications covering specialized subject matter in these fields are increasingly being made available to PDA users.

In an effort to provide information on the main technical and content features of selected applications, the National Library of Medicine's Division of Specialized Information Services (SIS) has undertaken an ongoing review of them. Typically, individual reports in the review series are based on free, downloadable demos.

Each report typically covers the following topics: General Information, Intended Users, Authorship/Data Source, Contents, Navigation, Requirements, Application Type/Price, Availability, Useful Web Links, and Updates.

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Note: The *Review of PDA Applications in Toxicology and Environmental Health* is not intended to be all comprehensive, but rather a review of selected applications. SIS staff welcomes any comments on completed reviews or suggestions for additional reviews of applications not currently included, as long as they fall within the scope of toxicology and environmental health. You may contact us via email at tehip@teh.nlm.nih.gov with any comments, questions, or suggestions.

It is not the intention of SIS staff to recommend, or not recommend, any particular PDA device(s) or software application(s), but rather to provide an objective and descriptive review of the main technical and content features of selected applications based on their downloadable demo versions.